INDEX TO VOLUME I.

A.

Absorption of infra-red rays, 1.
Actinometer, measure of radiant heat by, 365.
Alkalies, infra-red spectra of, 28, 95.
Alternating-current condensers, 81.
Alternating-current curves, 218.
American Association for Advancement of Science, 224.
American Institute of Electrical Engineers, 64.
Amplitude and phase of a force, 448.
Angström, K., quantitative determination of heat by electrical compensation, 365.
Anthony, William A., Martin's *Nikola Tesla*, 467.
Appointments in physics, 229.
Arc lamp, comparative power of, 342.
A, the vowel, studied by manometric flame, 166.
Austin, Louis W.;
  effects of extreme cold on magnetism, 381,
  longitudinal and torsional elastic fatigue, 401.

B.

Ballantyne, N. F., alternate-current condensers and dielectric hysteresis, 81.
Battery, Leyden jar as a storage, 460.
Bedell, Frederick;
  alternating currents, 68, 218, 320,
  Hawkins and Wallis's *The Dynamo*, 235,
  Jackson's *Electro-magnetism*, 315,
  mutually related currents, 117, 177.
Benjamin, P., *Voltaic Cell*, 72.
Bicyclic system of motions, 428.
Boiling-point and reaction velocity, 456.
Bolometer, construction and use, 30, 40.
Book reviews.
  Absolute measurements in electricity and magnetism, *Gray*, 66.
  Allgemeine chemie, *Ostwald*, 233.
  Alternating currents, *Bedell and Crehore*, 68, 320.
  Drum armatures and commutators, *Weymouth*, 473.
  Dynamo, the, *Hawkins and Wallis*, 235.
  Elasticity, theory of, *Love*, 310; *Poincaré*, 311.
  Electrical papers, *Heaviside*, 152.
  Electro-magnetism and dynamos, *Jackson*, 315.
  Experimental science, *Hopkins*, 240.
  Fourier's series, *Byerly*, 397.
  Frankfort Congress, the, 230.
  Gilbert's De Magnete, *Mottelay*, 70.
  Handbuch der physik, *Winkelmann*, 75.
  Handbuch der physiologischen optik, *Helmholtz*, 156.
  History of electricity, *Todhunter-Pearson*, 462.
  Inventions and works of Nikola Tesla, *Martin*, 467.
  Light and other high-frequency phenomena, *Tesla*, 305.
  Matter, ether, and motion, *Dolbear*, 158.
  Mechanics, *Mach*, 313.
  Photometrie industrielle, *Palaz*, 238.
  Physikalische-chemische tabellen, *Landolt and Börnstein*, 393.
  Primary batteries, *Benjamin*, 72.
  Recent researches in electricity and magnetism, *Thomson*, 391.
  Recent text-books in physics, 76, 159.
  Resistance of ships and screw propulsion, *Taylor*, 316.
  Stereochemistry, guide to, *Eiloart*, 239.
  Studies of atmospheric electricity, *Mendenhall*, 74.
  Theoretical mechanics, *Ziwet*, 399.
  Utility of quaternions in physics, *McAulay*, 387.
  Vision, *Ferrel*, 463.
Börnstein, R., *Physikalische-chemische Tabellen*, 393.
Byerly, William E., *Treatise on Fourier's Series*, 397.

C.

Calibration of prism, the, 38.
Capacity of alternate-current condensers, 81.

INDEX TO VOLUME I.

A.

Absorption of infra-red rays, 1.
Actinometer, measure of radiant heat by, 365.
Alkalies, infra-red spectra of, 28, 95.
Alternating-current condensers, 81.
Alternating-current curves, 218.
American Association for Advancement of Science, 224.
American Institute of Electrical Engineers, 64.
Amplitude and phase of a force, 448.
Angström, K., quantitative determination of heat by electrical compensation, 365.
Anthony, William A., Martin's *Nikola Tesla*, 467.
Appointments in physics, 229.
Arc lamp, comparative power of, 342.
A, the vowel, studied by manometric flame, 166.
Austin, Louis W.;
  effects of extreme cold on magnetism, 381,
  longitudinal and torsional elastic fatigue, 401.

B.

Ballantyne, N. F., alternate-current condensers and dielectric hysteresis, 81.
Battery, Leyden jar as a storage, 460.
Bedell, Frederick;
  alternating currents, 68, 218, 320,
  Hawkins and Wallis's *The Dynamo*, 235,
  Jackson's *Electro-magnetism*, 315,
  mutually related currents, 117, 177.
Benjamin, P., *Voltaic Cell*, 72.
Bicyclic system of motions, 428.
Boiling-point and reaction velocity, 456.
Bolometer, construction and use, 30, 40.
Book reviews.
  Absolute measurements in electricity and magnetism, *Gray*, 66.
  Allgemeine chemie, *Ostwald*, 233.
  Alternating currents, *Bedell and Crehore*, 68, 320.
  Drum armatures and commutators, *Weymouth*, 473.
  Dynamo, the, *Hawkins and Wallis*, 235.
  Elasticity, theory of, *Love*, 310; *Poincaré*, 311.
  Electrical papers, *Heaviside*, 152.
  Electro-magnetism and dynamos, *Jackson*, 315.
  Experimental science, *Hopkins*, 240.
  Fourier's series, *Byerly*, 397.
  Frankfort Congress, the, 230.
  Gilbert's De Magnete, *Mottelay*, 70.
  Handbuch der physik, *Winkelmann*, 75.
  Handbuch der physiologischen optik, *Helmholtz*, 156.
  History of electricity, *Todhunter-Pearson*, 462.
  Inventions and works of Nikola Tesla, *Martin*, 467.
  Light and other high-frequency phenomena, *Tesla*, 305.
  Matter, ether, and motion, *Dolbear*, 158.
  Mechanics, *Mach*, 313.
  Photometrie industrielle, *Palaz*, 238.
  Physikalische-chemische tabellen, *Landolt and Börnstein*, 393.
  Primary batteries, *Benjamin*, 72.
  Recent researches in electricity and magnetism, *Thomson*, 391.
  Recent text-books in physics, 76, 159.
  Resistance of ships and screw propulsion, *Taylor*, 316.
  Stereochemistry, guide to, *Eiloart*, 239.
  Studies of atmospheric electricity, *Mendenhall*, 74.
  Theoretical mechanics, *Ziwet*, 399.
  Utility of quaternions in physics, *McAulay*, 387.
  Vision, *Ferrel*, 463.
Börnstein, R., *Physikalische-chemische Tabellen*, 393.
Byerly, William E., *Treatise on Fourier's Series*, 397.

C.

Calibration of prism, the, 38.
Capacity of alternate-current condensers, 81.

Carhart, Henry S.;
Benjamin's *The Voltaic Cell*, 72,
electrical conductivity of copper, 321,
Elements of Physics, 76.
Chicago, meeting of Electrical Congress at, 62, 226.
Chute, H. N., *Elements of Physics*, 76.
Cold, effects of extreme, on magnetism, 381.
Compensation, measure of heat by electric, 365.
Concentration, influence of
on current density, 54,
on freezing-point, 283.
Condensers, alternate-current, 81.
Condition of ether surrounding a moving body, 426.
Copper,
critical current density of deposition of, 51,
electrical conductivity of, 321,
electrical resistance affected by temperature, 260,
velocity of migration of ions of, 51.
Crehore, Albert C.;
alternating currents, 68, 320,
mutually related currents, 117, 177,
three-ammeter method of measuring power, 59.
Critical current,
as affected by varying conditions, 361,
density for copper deposition, 51,
density for gold-leaf, 356.
Currents, flow in mutually related, 117, 177.
Curves, irregularities of alternate-current, 218.
Cyclic motion, 426.

D.

Daniel, J., polarization on metal partition, 241, 351.
Density, critical current, for copper deposition, 51.
Descent, times of, along chords of a circle, 461.
Diathermancy in different substances, 18.
Dielectric hysteresis, 81.
Dielectrics, strength of solid, liquid, and gaseous, 161.
Disc, use of sectored, in photometry, 338.
Distribution of strains studied by polarized light, 127.
Dolbear, A. E., *Matter, Ether, and Motion*, 158.
Downing, G. M., critical current density for copper deposition and absolute velocity of migration of copper ions, 51.
Durand, W. F., Taylor's *Screw Propulsion*, 316.
Dynamics of the ether, 459.

E.

Effects of extreme cold on magnetism, 381.
Eiloart, A., *Stereochemistry*, 239.
Elastic fatigue, longitudinal and torsional, 401.
Elasticity of stretching, fatigue in, 346.
Electrical conductivity of copper affected by surrounding medium, 321.
Electrical Congress at Chicago, 62, 226.
Electrical resistance of copper dependent on temperature, 260.
Electric arc, spectrum of, 42.
Electric compensation, measurement of heat by, 365.
Electric Engineers, meeting of American Institute of, 62.
Electric heating in laboratory practice, 144.
Electric influence on vibration of tuning-fork, 292.
Electric strength of solid, liquid, and gaseous dielectrics, 161.
Electrolysis, generation of oxygen and hydrogen by, 373.
Electrolytes as affecting polarization, 246.
Energy, distribution of, in spectrum, 49.
Energy spectra of alkalies, 95.
Ether, dynamics of the, 459.
Ether surrounding moving body, the, 426.

F.

Fatigue in elasticity of stretching, 346.
Fatigue, longitudinal and torsional elastic, 401.
Ferrel, William, *Vision*, 463.
Ferry, Ervin S.;
Helmholtz's *Physikalische Optik*, 156,
sectored disc in photometry, 338.
Fessenden, Reginald A.;
dynamics of the ether, 459,
temperature variation in electrical resistance of copper, 260.

Frankfort Congress, transactions of, 230.
Franklin, William S.;
Byerly's *Fourier's Series*, 397,
ether surrounding a moving body, 426,
focal length of lenses, 142,
Gray's *Absolute Measurements in Electricity and Magnetism*, 66,
Love's and Poincaré's *Theory of Elasticity*, 311,
three problems in forced vibration, 442.
Focal lengths of microscopic lenses, 142.
Freezing-points of dilute solutions, 199, 274.

G.

Galvanometers, construction of, 33, 437.
Geometric proof of three-ammeter method of measuring power, 59.
Gilbert, William, *Loadstone and Magnetic Bodies*, 70.
Glazerbrook, R. T., *Practical Physics*, 159.
Gray, A., *Absolute Measurements in Electricity and Magnetism*, 66.

H.

Harmonic components of current, 445.
Harmonic components of force, 442.
Harmonic impressed electro-motive force, 192.
Hawkins, C. C., *The Dynamo*, 235.
Heat, quantitative determination of radiant, by electrical compensation, 365.
Heating, electrical, in laboratory practice, 144.
Heaviside, O., *Electrical Papers*, 152.
von Helmholtz's *Physiologische Optik*, 156.
von Helmholtz's visit to America, 229.
Hertz, Heinrich, 321, 383.
Holman, S. W., *Precision of Measurements*, 77.
Hopkins, G. M., *Experimental Science*, 240.
Hysteresis, dielectric, 81.

I.

Incidental phenomena in laboratory work, 139.
Infra-red spectra of alkalies, 28, 95, 221.
Infra-red, transmission spectra in the, 1.
Ions, velocity of movement in copper, 56.

J.

Jackson, Dugald C.;
Electro-magnetism and Dynamos, 315,
Weymouth's *Drum Armatures*, 473.

K.

Kennelly, A. E.;
dynamics of the ether, 459,
electrical resistance of copper, 260.
Kohlrausch's experiments in torsional fatigue, 407.
Kortright, F. L., reaction velocity and boiling-point, 456.

L.

Laboratory, Williams College physical, 451.
Landolt, Hans, *Physikalische-chemische Tabellen*, 393.
Le Conte's determination of coefficient of expansion, 146.
Lefavour, Henry, Thompson physical laboratory, 451.
Leyden jar as a storage battery, 460.
Light, action of intermittent, on retina, 345.
Lime light, relative power of, 341.
von Lommel, E., *Experimental physik*, 160.
Loomis, E. H., freezing-points of dilute solutions, 199, 274, 381.
Loomis, H. B., Thomson's *Electricity and Magnetism*, 391.
Longitudinal and torsional elastic fatigue, 401.
Love, A. E. H., *Theory of Elasticity*, 310.

M.

Macfarlane, Alexander;
Bedell and Crehore's *Alternating Currents*, 68,
Heaviside's *Electrical Papers*, 152,
McAulay's *Utility of Quaternions*, 387,
strength of dielectrics, 161.
Mach, E., *Mechanics*, 313.
Magnetism affected by extreme cold, 381.
Manometric flame, photography of, 166.
Manometric flame, measure of pitch by, 175.
Marston, A., distribution of strains studied by polarized light, 127.
Martin, T. C., *Nikola Tesla*, 467.
Matthiessen's *Temperature Coefficient of Copper*, 260.

McAulay, A., *Utility of Quaternions*, 387.
McCormack, T. J., translation of Mach's *Mechanics*, 313.
Measurement of temperature variation in electrical resistance of copper, 260.
Mendenhall, T. C., *Atmospheric Electricity*, 74.
Merritt, Ernest;
Dolbear's *Matter, Ether, and Motion*, 158,
Landolt and Börnstein's *Physikalisch-chemische Tabellen*, 393,
Mottelay's translation of Gilbert's *De Magnete*, 70,
photography of manometric flame, 166,
text-books in physics, 76, 159.
Metallic lines in infra-red spectrum, 111.
Meter, determination of length, 19.
Migration of copper ions, 51.
Miller, K. B., alternate-current curves, 218.
Moler, G. S.;
generation of oxygen and hydrogen by electrolysis, 373,
rapid changes of potential, 214.
Monocyclic system of motions, 427.
Moreland, S. T., Leyden jar as a storage battery, 460.
Mottelay, P. Fleury, translation of Gilbert's *De Magnete*, 70.

N.

National Academy of Sciences, 62.
Nichols, Edw. L.;
electric heating in laboratory practice, 144,
ether surrounding a moving body, 426,
Frankfort Congress, 230,
generation of oxygen and hydrogen by electrolysis, 373,
Heinrich Hertz, 383.
Hopkins' *Experimental Science*, 240,
John Tyndall, 302,
Mendenhall's *Atmospheric Electricity*, 74,
Palaz's *Photometrie Industrielle*, 238,
Winkelmann's *Handbuch der Physik*, 75.
Nichols, Ernest F.;
surface tension, 299,
transmission spectra in the infra-red, 1.

O.

Oscillatory case of mutually related currents, 188.
Ostwald, W., *Allgemeine Chemie*, 233.
Oxygen and hydrogen generators, 373.

P.

Palaz, A., *Photometrie Industrielle*, 238.
Partition, polarization on a thin metal, 256.
Pearson, K., Todhunter's *History of Electricity*, 462.
Peddie, William, *Manual of Physics*, 79.
Photography of manometric flame, 166.
Photometry, use of sectored disc in, 338.
Pickering's conclusions as to freezing-points questioned, 289.
Pierce, G. W., strength of dielectrics, 161.
Poincaré's *Theory of Elasticity*, 311.
Polarization,
a function of
current strength, 354,
duration of current, 359,
strength of solution and nature of partition, 361,
on thin metal partition in a voltameter, 241, 351,
rotation of plane of, 149.
Polarized light, study of strains by, 127.
Potential, rapid changes of, 214.
Power, three-ammeter method of measuring, 59.
Prism, calibration of the, 38.
Pupin, M. I., Tesla's *High-Frequency Phenomena*, 305.
Pyrheliometer, measurement of radiant heat by, 365.
Pyrometer, acoustic, 140.

Q.

Quantitative determination of radiant heat by electrical compensation, 365.

R.

Rapidity of flow as influencing current density, 53.
Reaction velocity and boiling-point, 456.
Relation between lengths of yard and meter, 19.
Resistance, electric, of copper affected by temperature, 260.

Rogers, W. A., relative lengths of yard and meter, 19.

S.

Sabine, W. C., *Physical Measurements*, 78.
Sanford, F., an acoustic pyrometer, 140.
Science, Am. Ass. for Advancement of, 224.
Sciences, National Academy of, 62.
Sectored disc, use in photometry, 338.
Selby, A. L., *Mechanics of Solids and Liquids*, 159.
Shaw, W. N., *Practical Physics*, 159.
Shearer, J. S., vibration of tuning-forks, 147, 291.
Sheldon, Samuel, critical current density of copper deposition, 51.
Siemen's temperature coefficient of copper, 261.
Snow, Benjamin F.;
continuous spectrum of sodium, 296,
infra-red spectra of alkalies, 28, 95, 221.
Sodium, continuous spectrum of, 296.
Solutions, freezing-point of dilute, 199, 274.
Spectrum, continuous, of sodium, 296.
Spectrum of electric arc, 42.
Spectra, infra-red, of alkalies, 28, 95, 221.
Spectra, transmission in infra-red, 1.
Stevens, J. S., descent along chords of circle, 461.
Stevens, W. LeC., Ferrel's *Vision*, 463.
Strains,
direction of lines of, 129,
distribution of, 127,
fatigue of longitudinal, 410,
intensity of, 131.
Stretching, fatigue in elasticity of, 346.
Surface-tension experiments, 299.

T.

Taylor, D. W., *Screw Propulsion*, 316.
Temperature, influence of,
on capacity of condenser, 84,
on current density, 54,
on vibration of tuning-fork, 147, 291.
Tension, experiments in surface, 299.
Tesla, N., *High-Frequency Phenomena*, 305.
Thermometer, curve of, in cooling, 145.
Thompson Physical Laboratory, 451.
Thompson, Joseph O., fatigue in elasticity, 346.
Thomson, J. J., *Electricity and Magnetism*, 391.
Three-ammeter method of measuring power, geometric proof of, 59.
Times of descent along chords of a circle, 461.
Todhunter's *History of Electricity*, 462.
Torsional fatigue compared with longitudinal, 423.
Transmission spectra in the infra-red, 1.
Trevor, J. E.;
Ostwald's *Allgemeine Chemie*, 233,
reaction velocity and boiling-point, 456.
Tuning-forks, period affected by temperature and electric driving, 147, 291.
Tyndall, John, 241, 302.

V.

Velocity of migration of copper ions, 51.
Velocity, reaction, 456.
Vibration of tuning-forks, 147, 291.
Vibration, problems in forced, 442.
Voltameter,
change of potential studied by, 214,
polarization on partition in, 241, 351.

W.

Wagner, G. F., alternate-current curves, 218.
Wallis, F., *The Dynamo*, 235.
Wave-lengths and intensities of spectra, 113.
Weymouth, F. M., *Drum Armatures and Commutators*, 473.
Williams College Physical Laboratory, 451.
Williamson, R. B., alternate-current condensers and dielectric hysteresis, 81.
Winkelmann, A., *Handbuch der Physik*, 75.
Wright, T. W.;
McCormack's translation of Mach's *Mechanics*, 313,
Ziwet's *Theoretical Mechanics*, 399.

Y.

Yard and meter, relation between lengths, 19.

Z.

Ziwet, A., *Theoretical Mechanics*, 399.

INDEX TO VOLUME II.

A.

Absorption,
by crystals in the infra-red, Its dependence on the direction of the plane of polarization, *Merritt*, 244,
by glass and carbon bi-sulphide, Its relation to spectrophotometer use, 267,
by solutions, Influence of temperature on, *Nichols and Spencer*, 344.
in the ultra-violet, *Ernest Nichols*, 302.
Acetone, the solution-tension of silver nitrate in, 97.
Adelbert College, The physical laboratory of, *Whitman*, 53.
Alcohol, solution-tension of metals in, 86.
Allgemeine Eletrizitates-gesellschaft lamp, data concerning the candle power of, 120, 203.
Alternating current curves,
A method for recording, *Crehore*, 122,
A phonographic method for recording, *Rollefson*, 141.
American Association for the Advancement of Science, Brooklyn meeting, 227.
Ames, J. S., Frost's *Treatise on Astronomical Spectroscopy*, 308.
Amyl-acetate lamp as a light standard, 2, 28.
Attraction of masses at small distances, *Mackenzie*, 321.

B.

Baker, A. L., Cajori's *History of Mathematics*, 146.
Bauer, L. A.;
Hellman's *Neudrucke von Schriften und Karten ueber Meteorologie und Erdmagnetismus*, 70.
Hellman's *Schneekrystalle Beobachtungen und Studien*, 283.
Bauer, L. A. (*continued*):
On the secular motion of a free magnetic needle, 455.
Bedell, Frederick:
A study of the residual charges of condensers, 170,
On magnetic potential, 298,
Resonance in transformer circuits, 442.
Bliss, W. J. A., The apparent forces between particles immersed in liquids, 241, 373.
Bolometer, construction of, 3, 427.
Bolometric study of light standards, *Sharp and Turnbull*, 1.
Book Reviews:
Astronomical spectroscopy, *Frost*, 308,
Controverted questions in geology, *Prestwich*, 480.
Electro-magnetic theory, *Heaviside*, 152.
Electrical engineering formulæ, *Geipel and Kilgour*, 159.
Functions, the theory of, *Harkness*, 157.
Heat, an elementary text-book, *Glazebrook*, 230.
Heat, theory of, *Preston*, 154.
Heat, practical work in, *Woollcombe*, 237.
Heat, *Wright*, 236.
Hertz. The work of Hertz and some of his successors, *Lodge*, 397.
Hydrostatics, elementary, *Greaves*, 316.
Hydrostatics, a treatise on, *Greenhill*, 229.
Incandescent lamp, and its manufacture, *Ram*, 158, 240.
Light, an elementary text-book, *Glazebrook*, 314.
Magnetische Kreise, deren Theorie und Anwendung, *du Bois*, 311.

Book Reviews (*continued*):
Mathematics, history of, *Cajori*, 146.
Mathematische Physik, *Kirchhoff*, 73.
Mean density of the earth, *Poynting*, 76.
Neudrucke von Schriften und Karten ueber Meteorologie und Erdmagnetismus, *Hellman*, 70.
Oscillations électriques, *Poincaré*, 474.
Photographische Optik, *Miethe*, 400.
Photographic almanac, 400.
Physical laboratory manual, *Chute*, 317.
Physical laboratory manual, *Nichols*, 240.
Physical measurements, practical lessons in, *Earl*, 318.
Physical measurements, an introduction to, *Kohlrausch*, 318.
Physics, practical work in, *Woollcombe*, 317.
Physico-chemical measurements, *Ostwald*, 395.
Ramsay, Sir Andrew Crombie, memoir of, *Geikie*, 480.
Resistance, the measurement of electrical, *Price*, 319.
Schneekrystalle Beobachtungen und Studien, *Hellman*, 233.
Sound, theory of, *Rayleigh*, 471.
Steam engines and other heat engines, *Ewing*, 315.
Theoretical Mechanics, *Ziwet*, 398.
Thermodynamics of reversible cycles, *Pupin*, 239.
Brackett, S. H., On some magnetic characteristics of iridium, 219.

C.

Cajori, F., *A History of Mathematics*, 146.
Calc-spar, attraction between masses of, 330.
Capacity,
of electrolytic condensers, *Sheldon, Leitch, and Shaw*, 401,
On a relation between specific inductive capacity and chemical constitution of dielectrics, *Thwing*, 35.
Carbon bi-sulphide prism, change of refractive index with temperature, 269.
Carcel lamp as a light standard, 1, 17.
Carhart, H. S.;
Electric conductivity of copper as affected by the surrounding medium, 65,
Price's *Treatise on Electrical Resistance*, 319,
University Physics, 478,
Variation of internal resistance of a voltaic cell with current, 392.
Cell, variation of resistance with current, *Carhart*, 392.
Chemical constitution of dielectrics, their relation to specific inductive capacity, *Thwing*, 35.
Child, C. D.;
Lodge's *The Work of Hertz and Some of his Successors*, 397,
Thermal conductivity of copper, 412.
Church, I. P., Greenhill's *Treatise on Hydrostatics*, 229.
Chute, H. N., *A Physical Laboratory Manual*, 317.
Condensers,
The capacity of electrolytic, *Sheldon, Leitch, and Shaw*, 401,
Residual charges of, *Bedell and Kinsley*, 170.
Conductivity, electric,
of certain salt solutions, *MacGregory*, 361,
of copper as affected by the surrounding medium, 61, 66, 67,
of distilled water, 367.
Conductivity, thermal,
of cast iron, *Osmond*, 211,
of copper, *Quick, Child, and Lanphear* 412.
Copper,
electric conductivity, 61, 65, 67,
thermal conductivity, *Quick, Child, and Lanphear*, 412.
Crehore, H. C.;
A method for recording variable current curves, 122,
Resonance in transformer circuits, 442.
Crehore, Mary L., Studies of the lime-light, 161.
Cruto lamp, data concerning the candle power of, 116, 121, 203.

Crystals, absorption of, in the infra-red, as dependent on the direction of the plane of polarization, *Merritt*, 424.
Crystalline masses, on the attraction of, at small distances, 321.
Current curves, method of recording, *Crehore*, 122; *Rollefson*, 141.
Cushman, H. Recent text-books in laboratory physics, 317.

D.

Dielectrics,
their effect on the electric conductivity of copper, 61, 65, 67,
their specific inductive capacity and chemical constitution, *Thwing*, 35,
Residual charges of, *Bedell and Kinsley*, 170.
Diffraction of sound, note on a phenomenon in, *Franklin*, 469.
Dimensions of magnetic potential, *Bedell*, 299.
Discharge along the surface of a solid dielectric, 102.
Du Bois, H., *Magnetische Kreise, deren Theorie und Anwendung*, 311.
Dynamometer invented by Hertz, 36.

E.

Earl, A., *Practical Lessons in Physical Measurements*, 318.
Electric Congress, Proceedings of, 400.
Electric current, its influence on Young's modulus, *Noyes*, 277.
Electric strength, *Pierce*, 99.
Electrolytic condensers, the capacity of, *Sheldon, Leitch, and Shaw*, 401.
Electromotive force at surface of contact, 83, 85.
Energy, distribution of, in the spectrum of the glow-lamp, *Nichols*, 260.
English standard candle as a light standard, 1, 16.
Ewing, J. A., *The Steam Engine and Other Heat Engines*, 315.

F.

Flocculation, 241.
Forces between particles immersed in liquids, *Bliss*, 241.
Franklin, W. S.;
A method for testing magnetic properties, 466,
Note on a phenomenon in diffraction of sound, 469.
Frost, E. B., *A Treatise on Astronomical Spectroscopy*, 308.

G.

Galvanometer, used with bolometer, 7.
Geikie, Sir Archibald, *Memoirs of Ramsay*, 480.
Geipel, W., *Electrical Engineering Formulæ*, 159.
German candle as a light standard, 16.
Glazebrook, R. T.;
Heat, an Elementary Text-book, 238,
Light, an Elementary Text-book, 314.
Glow-lamp,
A general theory of, *Weber*, 112, 197,
The distribution of energy in the spectrum of, *Nichols*, 260.
Goodwin, H. M., Ostwald's *Physico-chemical Measurements*, 395.
Greaves, J., *Elementary Hydrostatics*, 316.
Greenhill, A. G., *A Treatise on Hydrostatics*, 229.

H.

Halley, E., *Isogonic Chart*, 72.
Hallock, W., The photography of manometric flames, 305.
Harkness, J., *A Treatise on the Theory of Functions*, 157.
Harmonic motion, A laboratory experiment in, *Reed*, 56.
Heat, its influence on Young's modulus, *Noyes*, 277.
Heaviside, O., *Electro-magnetic Theory*, 152.
Hefner lamp as a light standard, 2, 17.
Hellman, G.;
Neudrucke von Schriften und Karten ueber Meteorologie und Erdmagnetismus, 70.
Schneekrystalle Beobachtungen und Studien, 233.
Helmholtz, Hermann von, 222.
Hooker, E. H., Greaves' *Elementary Hydrostatics*, 316.

Houston, E. J., Spherical surfaces and their mercatorial projections, 143.
Howard, L., *Clouds, their Modifications*, 72.
Humphreys, W. J., Surface tension of water at low temperatures, 387.
Hutton, F. R., Ewing's *Steam Engine and Other Heat Engines*, 315.

I.

Iceland spar, absorption by, 434.
Incandescent lamp,
Distribution of energy in spectrum of, *Nichols*, 260,
A general theory of, *Weber*, 112, 191.
Infra-red absorption by certain crystals, and its relation to the plane of polarization, *Merritt*, 424.
International Electrical Congress held in Chicago, Proceedings of, 400.
Iridium, magnetic characteristics, *Brackett*, 219.
Iron,
A method of testing its magnetic properties, *Franklin*, 466,
Thermal conductivity of, *Osmond*, 211.
Isotropic masses, their attraction, at small distances, *Mackenzie*, 321.

J.

Jones, H. C., On the solution tension of metals, 81.

K.

Kennelly, A. E., spherical surfaces and the... mercatorial projections, 143.
Kilgour, M. H., *Electrical Engineering Formulæ*, 159.
Kimball, A. L., Glazebrook's *Light*, 314.
Kinsley, C., Residual charges of condensers, 170.
Kirchhoff, G., *Vorlesungen ueber mathematische Physik*, 73.
Kohlrausch, F., *An Introduction to Physical Measurements*, 318.
Kundt, August, 68.

L.

Lanphear, B. S., Thermal conductivity of copper, 412.
Leitch, H. W., The capacity of electrolytic condensers, 401.
Light,
A bolometric study of standards, *Sharp and Turnbull*, 1,
Studies of the lime-light, *M. C. Crehore*, 161.
Lime-light, studies of, *M. C. Crehore*, 161.
Lodge, O., *The Work of Hertz and Some of his Successors*, 397.
Lomb, H. C., Miethe's *Photographische Optik*, 400.

M.

Macfarlane, A.;
Heaviside's *Electro-magnetic Theory*, 152,
Poincaré's *Les Oscillations Electriques*, 474.
MacGregory, A. C., The electric conductivity of certain salt solutions, 361.
Mackenzie, A. S., On the attraction of isotropic and crystalline masses at small distances, 321.
McMahon, J., Rayleigh's *Theory of Sound*, 471.
Magnetic characteristics of iridium, *Brackett*, 219.
Magnetic needle, the secular motion of, *Bauer*, 455.
Magnetic potential, *Bedell*, 298.
Magnetic properties of iron, a new method of testing, *Franklin*, 466.
Manometric flames, The photography of, *Hallock*, 305.
Merritt, Ernest;
On the absorption of certain crystals in the infra-red as dependent on the direction of the plane of polarization, 424,
du Bois' *Magnetische Kreise, deren Theorie und Anwendung*, 311.
Kirchhoff's *Vorlesungen ueber mathematische Physik*, 73.
Metals, their solution-tension, *Jones*, 81.
Methven screen as a light standard, 1, 17.
Methyl alcohol, solution-tension of metals in, 94.
Miethe, A., *Photographische Optik*, 400.

Mohler, J. F., Surface-tension of water at low temperatures, 387.
Molecular conductivity, graphic representation of, 371.
Molecular force, the sphere of, 376.
Morley, F., *A Treatise on the Theory of Functions*, 157.

N.

Newton's law of attraction, experimental test, 334.
Nichols, Ernest, Transmission spectra in the ultra-violet, 302.
Nichols, E. L.;
A laboratory manual of physics, 240,
A new form of spectrophotometer, 138,
August Kundt, 68,
Distribution of energy in the spectrum of the glow-lamp, 260,
Geipel and Kilgour's *Electrical Engineering Formulæ*, 159,
Hermann von Helmholtz, 222,
Studies of the lime light, 161,
The influence of temperature on the transparency of solutions, 334.
Noyes, Mary C., the influence of heat and the electric current upon Young's modulus, 277.

O.

Oils, the electric resistance of, 183.
Osmond, I. T., Thermal conductivity of cast iron, 211.
Osmotic pressure,
its relation to particles in liquids, 255,
of salt solutions, 81.
Ostwald, W., *Manual of Physico-chemical Measurements*, 395.

P.

Paraffin, its electric strength, 100, 107.
Particles, the apparent forces between particles immersed in liquids, *Bliss*, 241, 373.
Pascal, Blaise, *Récit de la Grande Expérience de l'Equilibre des Liqueurs*, 70.
Peirce, L. M., Harkness' *Treatise on the Theory of Functions*, 157.
Phonographic method for recording alternating current curves, *Rollefson*, 141.
Photography,
American Annual of, 400,
of manometric flames, *Hallock*, 305,
Some experiments in electric, *Sanford*, 59.
Photometry; A bolometric study of light standards, *Sharp and Turnbull*, 1.
Physical laboratory at Adelbert College, *Whitman*, 53.
Pierce, G. W., On electric strength, 99.
Planck, M., editor of Kirchhoff's *Vorlesungen ueber mathematische Physik*, 73.
Poincaré, H., *Les Oscillations Électriques*, 474.
Polarization,
magnetic rotation of the plane of, 125,
relation of the absorption of crystals to the plane of, *Merritt*, 424.
Potential,
Magnetic, *Bedell*, 298,
outside a sphere, 339.
Poynting, J. H., *The Mean Density of the Earth*, 76.
Preston, E. D., Poynting's *Mean Density of the Earth*, 76.
Preston, T., *Theory of Heat*, 154.
Prestwick, J., *Controverted Questions in Geology*, 480.
Price, W. A., *A Treatise on the Measurement of Electric Resistance*, 319.
Pupin, M. I., *Thermodynamics of Reversible Cycles*, 239.

Q.

Quartz, absorption in, and its relation to the plane of polarization, 437.
Quick, R. W., Thermal conductivity of copper, 412.

R.

Ram, G. C., *The Incandescent Lamp and its Manufacture*, 158, 240.
Rayleigh, *Theory of Sound*, 471.
Reed, J. O., A laboratory experiment in simple harmonic motion, 56.
Refractive index, change due to particles in liquids, 253.

Residual charges of condensers, *Bedell and Kinsley*, 170.
Resistance,
offered by a medium contained between spherical surfaces, *Houston and Kennelly*, 143,
of electric oils, effect of temperature on, 183,
Variation of internal resistance of cell with current, *Carhart*, 392.
Resonance in transformer circuits, *Bedell and Crehore*, 442.
Reynman, L., *Wetterbüchlein*, 71.
Roberts, E. P., Ram's *Incandescent Lamp and its Manufacture*, 158.
Rogers, F. J.,
Carhart's *University Physics*, 478,
Recent text-books on heat, 336.
Rollefson, C. J., A phonographic method of recording alternate current curves, 141.

S.

Salt solutions, electric conductivity of, *MacGregory*, 361.
Sanford, F.;
Electric photography, 59,
Electric conductivity of copper, 61, 67.
Scheiner, J., translation of *Spectralanalyse der Gestirne*, 308.
Secular motion of a magnetic needle, *Bauer*, 455.
Sharp, C. H., A bolometric study of light standards, 1.
Shaw, A. N., The capacity of electrolytic condensers, 401.
Sheldon, S., The capacity of electrolytic condensers, 401.
Silver nitrate in acetone; its solution-tension, 97.
Slate, F., Preston's *Theory of Heat*, 154.
Solutions,
Electric conductivity of salt solutions, *MacGregory*, 361,
Influence of temperature on transparency of, *Nichols and Spencer*, 344.
Solution-tension of metals, *Jones*, 81.
Sound, Note on phenomena in diffraction of, *Franklin*, 469.
Specific inductive capacity of dielectrics; its relation to their chemical constitution, *Thwing*, 35.
Spectro-bolometer, construction of, 427.
Spectro-photometer, A new form of, *Nichols*, 138.
Spectrum of the glow-lamp, the distribution of energy in, *Nichols*, 260.
Spencer, Mary C., The influence of temperature on the transparency of solutions, 344.
Spherical surfaces and their mercatorial projections, *Houston and Kennelly*, 143.
Sunbeam lamp, data concerning the candle power of, 120, 203.
Surface of contact, difference of potential at, 82, 85.
Surface tension of water at low temperatures, *Humphreys and Mohler*, 387.

T.

Thermal conductivity,
of cast iron, *Osmond*, 211,
of copper, *Quick, Child and Lanphear*, 412.
Thermo-pile used in exploring the spectrum, 268.
Thwing, C. B., Specific inductive capacity and chemical constitution of dielectrics, 35.
Transformer circuits, Resonance in, *Bedell and Crehore*, 442.
Transparency of solutions, The influence of temperature on, *Nichols and Spencer*, 344.
Turmalin, absorption of, 439.
Turnbull, W. R., A bolometric study of light standards, 1.

U.

Ultra-violet, transmission spectra in the, *Ernest Nichols*, 302.

V.

Variable current curves, A method of recording, *Crehore*, 122.
Verdet's constant, 134.
Voltaic cell; variation of resistance, *Carhart*, 392.

W.

Walker, J., translation of Ostwald's *Physico-chemical Measurements*, 395.
Water, its surface tension below zero centigrade, *Humphreys and Mohler*, 387.
Weber, H. S., A general theory of the glow-lamp, 112, 197.
Whitman, F. P., The physical laboratory of Adelbert College, 53.
Woodhouse and Rawson's lamp, data concerning the candle power of, 119, 204.
Woollcombe, W. G.;
Practical Work in General Physics, 317,
Woollcombe, W. G.;
Practical Work in Heat, 237.
Wright, M. R., *Heat*, 236.
Wright, T. W., Ziwet's *Theoretical Mechanics*, 399.

Y.

Young's modulus, The influence of heat and the electric current upon, *Noyes*, 277.

Z.

Ziwet, A., *An Elementary Treatise on Theoretical Mechanics*, 399.